

Montana Board of Oil and Gas Conservation
Environmental Assessment

Operator: Continental Resources, Inc.
Well Name/Number: Buckley 1-9H
Location: SE SW Section 9 T25N R56E
County: Richland, **MT;** **Field (or Wildcat)** W/C

Air Quality

(possible concerns)

Long drilling time: No, 30 to 40 days drilling time.

Unusually deep drilling (high horsepower rig): Yes, triple derrick, 1000 HP drilling rig to drill a single lateral Bakken Formation horizontal well, 19,468'MD/9,939'TVD.

Possible H₂S gas production: Slight.

In/near Class I air quality area: No not in a class I air quality area.

Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:

☒ Air quality permit (AQB review)

☒ Gas plants/pipelines available for sour gas

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: No special concerns – using triple rig to drill a single lateral Bakken Formation horizontal well, 19,468'MD/9,939'TVD.

Water Quality

(possible concerns)

Salt/oil based mud: Yes, freshwater and freshwater mud system on surface hole and oil based mud system on main hole. Brine water in the horizontal lateral.

High water table: No high water table anticipated.

Surface drainage leads to live water: Yes, from this location, about 1/8 of a mile to the north and about 1/4 of a mile to the east are unnamed ephemeral tributary drainages to Hardscrabble Creek. Within these ephemeral drainages is a stock pond, about 3/8 of a mile to the northeast from this location.

Water well contamination: No, closest stock water wells are about 3/4 of a mile to the east, 7/8 of a mile to the northwest and 1 mile to the northwest from this location.

Surface hole will be drilled with freshwater and freshwater muds to 1900'. Surface casing will be cemented to surface from 1900'.

Porous/permeable soils: No, sandy clay soils.

Class I stream drainage: No Class I stream drainages in the area of review.

Mitigation:

☒ Lined reserve pit

☒ Adequate surface casing

☐ Berms/dykes, re-routed drainage

☐ Closed mud system

☐ Off-site disposal of solids/liquids (in approved facility)

☐ Other: _____

Comments: 1900' of surface casing cemented to surface adequate to protect freshwater zones.

Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: No, stream crossing required.

High erosion potential: No, moderate cut, up to 13.7' and moderate fill, up to 14.3', required.

Loss of soil productivity: No, location will be restored after drilling, if nonproductive. If productive unused portion of drillsite will be reclaimed.

Unusually large wellsite: Large wellsite, 500'X270' location size required.

Damage to improvements: Slight, surface use is cultivated land.

Conflict with existing land use/values: Slight

Mitigation

☐ Avoid improvements (topographic tolerance)

☐ Exception location requested

☒ Stockpile topsoil

☐ Stream Crossing Permit (other agency review)

☒ Reclaim unused part of wellsite if productive

☐ Special construction methods to enhance reclamation

☒ Other: Requires DEQ General Permit for Storm Water Discharge Associated with Construction Activity, under ARM 17.30.1102(28).

Comments: Access will use existing county road, County Road 335. A new access road will be built into this location off the existing county road, about 3224'. A lined reserve pit will be used to hold drill cuttings and drilling fluids. Free liquids in the reserve pit will be trucked to a Class II Disposal. Cuttings will be allowed to dry in the reserve pit, after drying the cuttings will be buried in the lined reserve pit. No special concerns.

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: None within 1 mile of this location. Doran School about 1.25 miles to the northeast from this location.

Possibility of H₂S: Slight H₂S possible.

Size of rig/length of drilling time: Triple drilling rig 30 to 40 days drilling time.

Mitigation:

☒ Proper BOP equipment

☐ Topographic sound barriers

☐ H₂S contingency and/or evacuation plan

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: Adequate surface casing and operational BOP should mitigate any problems. No concerns

Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): None identified.

Proximity to recreation sites: None identified.

Creation of new access to wildlife habitat: No

Conflict with game range/refuge management: No

Threatened or endangered Species: Listed threatened or endangered Species in Richland County, Piping Plover, Interior Lease Tern, Whooping Crane and Pallid Sturgeon. Candidate species is the Greater Sage Grouse.

Mitigation:

- ☐ Avoidance (topographic tolerance/exception)
- ☐ Other agency review (DFWP, federal agencies, DSL)
- ☐ Screening/fencing of pits, drillsite
- ☐ Other: _____

Comments: Private surface lands, cultivated field. No concerns.

Historical/Cultural/Paleontological

(possible concerns)

Proximity to known sites: None identified.

Mitigation

- ☐ avoidance (topographic tolerance, location exception)
- ☐ other agency review (SHPO, DSL, federal agencies)
- ☐ Other: _____

Comments: On private cultivated surface lands. No concerns.

Social/Economic

(possible concerns)

- ☐ Substantial effect on tax base
- ☐ Create demand for new governmental services
- ☐ Population increase or relocation

Comments: No concerns

Remarks or Special Concerns for this site

Well is a wildcat, single lateral Bakken Formation horizontal well, 19,468'MD/9,939'TVD.

Summary: Evaluation of Impacts and Cumulative effects

No long term impacts expected. Some short term surface impacts will occur.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the

human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): /s/Steven Sasaki
(title:) Chief Field Inspector
Date: October 5, 2010

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC
website
(Name and Agency)
Richland County water wells
(subject discussed)
October 4, 2010
(date)

US Fish and Wildlife, Region 6 website
(Name and Agency)
ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES
MONTANA COUNTIES, Richland County
(subject discussed)
October 5, 2010
(date)

If location was inspected before permit approval:

Inspection date: _____

Inspector: _____

Others present during inspection: _____